| | Disease | Parasite | Risk population | Endemic region | Cases or deaths/year | CNS disorder triggered | Cytokines involved | Immune cells involved | References |
|---|---|---|---|---|---|---|---|---|---|
| **Acute neuroinflammation** | **Cerebral malaria** | Plasmodium *falciparum* (Protozoan) | Immunodeficient people<br>Children under 5 years<br>Pregnant women<br>Non-endemic population | Sub-saharan Africa, Latin America, South Est of Asia | 435,000 deaths/year | Paralysis<br>Seizures<br>Coma<br>Death | IP10<br>TNF-a<br>IL-6<br>IFN-y | Astrocytes<br>Microglia<br>LtCD8+ | (24,28,25) |
| | **African tryponozomiasis** | Trypanozoma *brucei rhodesiense* (Protozoan)<br>Trypanosoma *brucei gambiense* (Protozoan) | 15 and 45 years and living in remote rural areas are considered especially vulnerable | Democratic Republic of the Congo<br>Angola<br>Sudan<br>Republic of Congo<br>Central African Republic | 977 cases/year but this is an underestimate because the disease is mostly found in rural communities in the endemic areas | Leukoencephalitis<br>Headache<br>Personality changes<br>Daytime somnolence<br>Sensory motor and<br>Psychiatric disorders<br>Death | IFN-y<br>TNF-a<br>IL-1ß<br>IFNa/b<br>CXCL10 | Proliferation of astrocytes<br>Hypertrophy of astrocytes<br>Activation of microglia<br>Hypertrophy of Microglia<br>Formation of microglia nodules<br>T lymphocytes | (12, 10, 11) |
| **Chronic neuroinflammation** | **Neurocysticercosis** | Taenia *solium* (Cestode) | Children and women from infancy to old age, with a peak incidence at 20–50 years of age | Latin America<br>Africa<br>Asia | Approximately 370,710 individuals were infected with T. solium cysticercosis worldwide, resulting in over 28,000 deaths | Seizures<br>Epilepsy<br>Focal neurological deficits<br>Elevated intracranial pressure<br>Cognitive decline | TNF-a<br>IFN-y<br>IL-1ß | Lymphocyte TH1<br>Astrocytes<br>Microglia<br>Neutrophils<br>Eosinophils<br>Monocytes | (49, 46) |
| | **Neuroschistomiasis** | Schistosoma *mansoni* (Trematode)<br>Schistosoma *haematobium (Trematode)* | Non-endemic population<br>Immunodeficient people<br>young people and adults | Tropics and subtropics | Over 200 million people are infected by the parasite but only 4% developed neuroschistosomiasis | Headache<br>Visual disturbances<br>Delirium<br>Seizures<br>Motor impairment<br>Ataxia<br>Encephalopathy | TNF-a<br>IFN-y<br>IL-1ß | Lymphocyte TH1<br>Astrocytes<br>Microglia<br>Neutrophils<br>Eosinophils<br>Monocytes | (12, 54, 11) |
| | **Neurotoxoplasmosis** | Toxoplasma *gondii (Protozoan)* | Pregnant women<br>immunodieficient people | Worldwide | 1/3 of the population is infected (2–3 billion people worldwide) | Headache<br>Altered mental status<br>Seizures<br>Focal neurologic deficits Hemiparesis<br>Ataxia<br>Cranial nerve palsies<br>Meningoencephalitis | IFN-α<br>IFN-β<br>IFN-y<br>CXCL10<br>IL-12<br>IL-6 | Monocytes<br>Dendritic cells<br>Astrocytes<br>Microglia | (12, 11, 38 ) |